

# Intravenous fluid therapy in children and young people in hospital

Quality standard

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[www.nice.org.uk/guidance/qs131](http://www.nice.org.uk/guidance/qs131)

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This standard is based on NG29.

This standard should be read in conjunction with QS125, QS122, QS66, QS64, QS19 and QS166.

## Introduction

This quality standard covers the management of intravenous (IV) fluids in term neonates (babies born at term or born prematurely with a corrected age of term or more), children and young people under 16 years. It covers IV fluids used for a range of conditions and in different hospital settings. It does not cover term neonates, children and young people with condition-specific IV fluid needs, because they are under the care of specialists due to their specific needs. For more information see the [IV fluid therapy in children and young people in hospital topic overview](#).

NICE quality standard 66 for [IV fluid therapy in adults in hospital](#) covers young people and adults aged 16 and over.

### *Why this quality standard is needed*

A correct fluid and electrolyte balance is essential to maintain normal physiological function. Term neonates, children and young people may need IV fluids for a number of reasons to maintain this balance:

- **Routine maintenance:** to correct or maintain the fluid and electrolyte balance when term neonates, children and young people are not able to maintain their normal fluid needs by eating and drinking.
- **Fluid replacement:** to replace red blood cells, plasma, water or electrolytes beyond the usual losses in urine, stools and sweat. These losses can come from burns, diarrhoea, vomiting or leakage of fluid into the interstitial space. In these cases, the aim is to rebalance and redistribute fluids and ensure the correct levels of electrolytes.
- **Fluid resuscitation:** to rapidly expand blood volume, restore or maintain blood flow to the organs can be a lifesaving intervention. IV fluid resuscitation is commonly used in term neonates, children and young people undergoing major surgery, to treat sepsis, and after severe trauma.

When IV fluid therapy is needed for routine maintenance, fluid replacement or fluid resuscitation,

it is vital that the correct composition, volume and timing of IV fluid therapy are used. Different types of IV fluids are appropriate for different situations.

Errors in prescribing or administering IV fluids can result in adverse events caused by inadequate or excessive provision. These events include abnormalities in plasma electrolytes and glucose (hyponatraemia [decreased sodium in the blood; defined as plasma sodium less than 135 mmol/litre] and hypernatraemia [increased sodium in the blood; defined as plasma sodium greater than 145 mmol/litre]) and clinical consequences such as hypovolaemia (decreased blood volume) and poor organ perfusion (lack of blood circulating through the organs), hypervolaemia (increased blood volume), cerebral oedema (brain swelling) and heart failure. Failure to correct imbalances and deliver correct fluids can have a significant impact on morbidity and mortality.

The quality standard is expected to contribute to improvements in the following outcomes:

- patient safety incidents resulting from errors in IV fluid therapy
- length of hospital stay
- children's and young peoples' experience of inpatient services
- mortality resulting from errors in IV fluid therapy.

### *How this quality standard supports delivery of outcome frameworks*

NICE quality standards are a concise set of prioritised statements designed to drive measurable improvements in the 3 dimensions of quality – safety, experience and effectiveness of care – for a particular area of health or care. They are derived from high-quality guidance, such as that from NICE or other sources accredited by NICE. This quality standard, in conjunction with the guidance on which it is based, should contribute to the improvements outlined in the following 2 outcome frameworks published by the Department of Health:

- [NHS outcomes framework 2016–17](#)
- [Public health outcomes framework for England 2016–19.](#)

Tables 1 and 2 show the outcomes, overarching indicators and improvement areas from the frameworks that the quality standard could contribute to achieving.

**Table 1 NHS outcomes framework 2016–17**

Domain	Overarching indicators and improvement areas
1 Preventing people from dying prematurely	<p><b>Overarching indicators</b></p> <p>1a Potential Years of Life Lost (PYLL) from causes considered amenable to healthcare</p> <p>ii Children and young people</p> <p>1c Neonatal mortality and stillbirths</p> <p><b>Improvement areas</b></p> <p>Reducing mortality in children</p> <p>1.6 i Infant mortality*</p>
4 Ensuring that people have a positive experience of care	<p><b>Overarching indicators</b></p> <p>4b Patient experience of hospital care</p> <p><b>Improvement areas</b></p> <p>Improving children and young people's experience of healthcare</p> <p>4.8 <i>Children and young people's experience of inpatient services</i></p>
5 Treating and caring for people in a safe environment and protecting them from avoidable harm	<p><b>Overarching indicators</b></p> <p>5a <i>Deaths attributable to problems in healthcare</i></p> <p>5b <i>Severe harm attributable to problems in healthcare</i></p> <p><b>Improvement areas</b></p> <p>Improving the culture of safety reporting</p> <p>5.6 Patient safety incidents reported</p>
<p><b>Alignment with Public health outcomes framework</b></p> <p>* Indicator is shared</p> <p>Indicators in italics in development</p>	

**Table 2 Public health outcomes framework for England 2016–19**

Domain	Objectives and indicators
4 Healthcare public health and preventing premature mortality	<p><b>Objective</b></p> <p>Reduced numbers of people living with preventable ill health and people dying prematurely, whilst reducing the gap between communities</p> <p><b>Indicators</b></p> <p>4.01 Infant mortality*</p> <p>4.03 Mortality rate from causes considered preventable**</p>
<p><b>Alignment with NHS outcomes framework</b></p> <p>* Indicator is shared</p> <p>** Indicator is complementary</p>	

### *Safety and people's experience of care*

Ensuring that care is safe and that people have a positive experience of care is vital in a high-quality service. It is important to consider these factors when planning and delivering services relevant to IV fluid therapy in term neonates, children and young people in hospital.

### *Coordinated services*

The quality standard for IV fluid therapy in term neonates, children and young people in hospital specifies that services should be commissioned from and coordinated across all relevant agencies encompassing the whole care pathway. A person-centred, integrated approach to providing services is fundamental to delivering high-quality care to term neonates, children and young people receiving IV fluid therapy.

The Health and Social Care Act 2012 sets out a clear expectation that the care system should consider NICE quality standards in planning and delivering services, as part of a general duty to secure continuous improvement in quality. Commissioners and providers of health and social care should refer to the library of NICE quality standards when designing high-quality services. Other quality standards that should also be considered when choosing, commissioning or providing a high-quality service for IV fluid therapy in term neonates, children and young people in hospital are listed in [related NICE quality standards](#).



## **Training and competencies**

The quality standard should be read in the context of national and local guidelines on training and competencies. All healthcare professionals involved in assessing, caring for and treating term neonates, children and young people receiving IV fluid therapy should have sufficient and appropriate training and competencies to deliver the actions and interventions described in the quality standard. Quality statements on staff training and competency are not usually included in quality standards. However, recommendations in the development source on specific types of training for the topic that exceed standard professional training are considered during quality statement development.

## **Role of families and carers**

Quality standards recognise the important role families and carers have in supporting term neonates, children and young people receiving IV fluid therapy. If appropriate, healthcare professionals should ensure that family members and carers are involved in the decision-making process about investigations, treatment and care.

## List of quality statements

Statement 1. Term neonates, children and young people receiving intravenous (IV) fluid therapy have their plasma electrolyte concentrations and blood glucose measured when starting IV fluids and then at least every 24 hours.

Statement 2. Term neonates, children and young people receiving IV fluid therapy have their fluid balance assessed when starting IV fluids and then at least every 12 hours.

Statement 3. Term neonates, children and young people are not given hypotonic fluids or glucose-containing fluids for IV fluid resuscitation.

Statement 4. Term neonates, children and young people receiving IV fluids for routine maintenance are not given hypotonic fluids as the initial fluid.

Statement 5. Hospitals have an IV fluids lead who has overall responsibility for training, clinical governance, audit and review of IV fluid prescribing, and patient outcomes.

## Quality statement 1: Measuring plasma electrolyte concentration and blood glucose

### *Quality statement*

Term neonates, children and young people receiving intravenous (IV) fluid therapy have their plasma electrolyte concentrations and blood glucose measured when starting IV fluids and then at least every 24 hours.

### *Rationale*

Continual assessment and monitoring of IV fluid, plasma electrolyte and blood glucose needs is important to ensure term neonates, children and young people maintain a correct fluid and electrolyte balance to reduce the risk of adverse events. As part of this, measuring and documenting patients' plasma electrolyte concentrations and blood glucose, initially and then every 24 hours, ensures that the correct type (that is, concentration of sodium and glucose) of IV fluid is prescribed. Documenting this, ideally on a standardised chart, helps healthcare professionals assess patients' fluid and electrolyte needs, prescribe and administer IV fluids, and monitor patient response. It is also helpful for healthcare professionals when patients are moved between or within hospitals.

### *Quality measures*

#### **Structure**

Evidence of local arrangements to ensure that term neonates, children and young people receiving IV fluid therapy have their plasma electrolyte concentrations and blood glucose measured when starting IV fluids and then at least every 24 hours.

*Data source:* Local data collection.

#### **Process**

a) Proportion of term neonates, children and young people starting IV fluid therapy who have their plasma electrolyte concentrations and blood glucose measured.

Numerator – the number in the denominator who have their plasma electrolyte concentrations and blood glucose measured.

Denominator – the number of term neonates, children and young people starting IV fluid therapy.

*Data source:* Local data collection.

b) Proportion of term neonates, children and young people receiving IV fluid therapy who have their plasma electrolyte concentrations and blood glucose measured every 24 hours or less from the start of IV fluids.

Numerator – the number in the denominator who have their plasma electrolyte concentrations and blood glucose measured every 24 hours or less from the start of IV fluids.

Denominator – the number of term neonates, children and young people receiving IV fluid therapy.

*Data source:* Local data collection.

## Outcome

Patient safety incidents resulting from errors in IV fluid therapy in term neonates, children and young people.

*Data source:* Local data collection.

## *What the quality statement means for service providers, healthcare professionals and commissioners*

**Service providers** (hospitals) ensure that systems are in place for term neonates, children and young people to have their plasma electrolyte concentrations and blood glucose status measured and documented when starting IV fluids and then at least every 24 hours.

**Healthcare professionals** (such as hospital doctors and nurse practitioners) ensure that they measure and document plasma electrolyte concentrations and blood glucose in term neonates, children and young people when starting IV fluids and then at least every 24 hours.

**Commissioners** (such as clinical commissioning groups and NHS England) ensure that they commission services in which term neonates, children and young people have their plasma electrolyte concentrations and blood glucose measured and documented when starting IV fluids and then at least every 24 hours. A standardised fluid balance chart should be agreed to help staff assess patients' plasma electrolyte and blood glucose status, prescribe and administer IV fluids,

monitor patient response and help staff when patients move between hospitals and between hospital departments.

### *What the quality statement means for patients, service users and carers*

Term neonates (babies born at full term), children and young people have blood tests when they start IV fluid therapy to decide the type of IV fluid they need, and then again at least every 24 hours to ensure that they continue to receive the right type of IV fluid. The blood tests are to find out the levels of salt and sugar in the blood. All the information is recorded on a chart in their medical notes. Intravenous fluids (usually shortened to 'IV' fluids) are liquids given to replace water, sugar and salt that a person might need if they are ill or having an operation, and can't eat or drink as they would normally. IV fluids are given straight into a vein through a drip.

### *Source guidance*

- [Intravenous fluid therapy in children and young people in hospital](#) (NICE guideline NG29) recommendations 1.2.4 and 1.2.5

### *Definitions of terms used in this quality statement*

#### **Plasma electrolyte and blood glucose status**

Both sodium and glucose should be measured as part of this assessment. This assessment should not routinely take place before elective surgery unless there is a need to do so, based on the child's medical condition or type of surgery.

[NICE guideline on [intravenous fluid therapy in children and young people in hospital](#), recommendations 1.2.4, 1.2.5 and 1.4.5]

## Quality statement 2: Assessment of fluid balance

### *Quality statement*

Term neonates, children and young people receiving intravenous (IV) fluid therapy have their fluid balance assessed when starting IV fluids and then at least every 12 hours.

### *Rationale*

Continual assessment and monitoring of IV fluid, plasma electrolyte and blood glucose needs is important to ensure term neonates, children and young people maintain a correct fluid and electrolyte balance to reduce the risk of adverse events. As part of this, assessing and documenting patients' fluid balance, initially and then every 12 hours, ensures that the correct amount of IV fluid is prescribed. Documenting this, ideally on a standardised chart, helps healthcare professionals assess patients' fluid and electrolyte needs, prescribe and administer IV fluids, and monitor patient response. It is also helpful for healthcare professionals when patients are moved between or within hospitals.

### *Quality measures*

#### **Structure**

Evidence of local arrangements to ensure that term neonates, children and young people receiving IV fluid therapy have their fluid balance assessed when starting IV fluids and then at least every 12 hours.

**Data source:** Local data collection.

#### **Process**

a) Proportion of term neonates, children and young people starting IV fluid therapy who have their fluid balance assessed.

Numerator – the number in the denominator who have their fluid balance assessed.

Denominator – the number of term neonates, children and young people starting IV fluid therapy.

**Data source:** Local data collection.

b) Proportion of term neonates, children and young people receiving IV fluid therapy who have their fluid balance assessed every 12 hours or less from starting IV fluids.

Numerator – the number in the denominator who have their fluid balance assessed every 12 hours or less from starting IV fluids.

Denominator – the number of term neonates, children and young people receiving IV fluid therapy.

*Data source:* Local data collection.

## Outcome

Patient safety incidents resulting from errors in IV fluid therapy in term neonates, children and young people.

*Data source:* Local data collection.

### *What the quality statement means for service providers, healthcare professionals and commissioners*

Service providers (hospitals) ensure that systems are in place for term neonates, children and young people to have their fluid balance assessed and documented when starting IV fluids and then at least every 12 hours.

Healthcare professionals (such as hospital doctors and nurse practitioners) ensure that term neonates, children and young people have their fluid balance assessed and documented when they start IV fluids and then at least every 12 hours.

Commissioners (such as clinical commissioning groups and NHS England) ensure that they commission services in which term neonates, children and young people have their fluid balance assessed and documented when starting IV fluids and then at least every 12 hours. A standardised fluid balance chart should be agreed to help staff assess patients' fluid needs, prescribe and administer IV fluids, monitor patient response and help staff when patients move between hospitals and between hospital departments.

### *What the quality statement means for patients, service users and carers*

Term neonates (babies born at full term), children and young people have their fluid levels checked

when they start IV fluid therapy to decide the amount of IV fluid they need, and then at least every 12 hours to ensure that they continue to receive the right amount of IV fluid. All the information is recorded on a chart in their medical notes. Intravenous fluids (usually shortened to 'IV' fluids) are liquids given to replace water, sugar and salt that a person might need if they are ill or having an operation, and can't eat or drink as they would normally. IV fluids are given straight into a vein through a drip.

### *Source guidance*

- [Intravenous fluid therapy in children and young people in hospital](#) (NICE guideline NG29) recommendation 1.2.3



## Quality statement 3: Fluid type for intravenous (IV) fluid resuscitation

### *Quality statement*

Term neonates, children and young people are not given hypotonic fluids or glucose-containing fluids for intravenous (IV) fluid resuscitation.

### *Rationale*

There are safety concerns about the use of hypotonic IV fluids in term neonates, children and young people. They have been associated with the development of hyponatraemia (decreased sodium levels in the blood), which can increase the risk of developing brain swelling and neurological complications as a consequence of hyponatraemia. To avoid these adverse consequences, hypotonic IV fluids should not be given for fluid resuscitation.

Term neonates, children and young people should receive glucose-free crystalloids for fluid resuscitation because they are the safest option.

### *Quality measures*

#### **Structure**

Evidence of local arrangements to ensure that term neonates, children and young people are not given hypotonic fluids or glucose-containing fluids for IV fluid resuscitation.

**Data source:** Local data collection.

#### **Process**

Proportion of term neonates, children and young people who are given hypotonic fluids or glucose-containing fluids for IV fluid resuscitation.

Numerator – the number in the denominator who are given hypotonic fluids or glucose-containing fluids for IV fluid resuscitation.

Denominator – the number of term neonates, children and young people receiving IV fluid resuscitation.

**Data source:** Local data collection.

## Outcome

Incidence of hyponatraemia attributable to IV fluid therapy in term neonates, children and young people.

*Data source:* Local data collection.

### *What the quality statement means for service providers, healthcare professionals and commissioners*

Service providers (hospitals) ensure that protocols are in place so that term neonates, children and young people are not given hypotonic fluids or glucose-containing fluids for IV fluid resuscitation.

Healthcare professionals (such as hospital doctors and nurse practitioners) do not give hypotonic fluids or glucose-containing fluids to term neonates, children and young people for IV fluid resuscitation.

Commissioners (such as clinical commissioning groups and NHS England) ensure that they commission services that do not give hypotonic fluids or glucose-containing fluids to term neonates, children and young people for IV fluid resuscitation.

### *What the quality statement means for patients, service users and carers*

Term neonates (babies born at full term), children and young people receiving IV fluid therapy to replace lost fluids are not given a type of IV fluid called hypotonic fluid or fluids containing glucose when they start IV fluid therapy. Intravenous fluids (usually shortened to 'IV' fluids) are liquids given to replace water, sugar and salt that a person might need if they are ill or having an operation, and can't eat or drink as they would normally. IV fluids are given straight into a vein through a drip.

## Source guidance

- [Intravenous fluid therapy in children and young people in hospital](#) (NICE guideline NG29) recommendations 1.3.1 and 1.3.2

## Definitions of terms used in this quality statement

### Hypotonic fluids

A hypotonic fluid is a solution with a lower concentration of electrolytes than body plasma. An

example of a hypotonic fluid is 0.45% sodium chloride. Although some solutions are isomolar in vitro, they are hypotonic in vivo (for example 0.45% sodium chloride with 2.5% glucose). See NICE's guideline on [intravenous fluid therapy in children and young people in hospital](#) for further examples of hypotonic and isotonic fluids.

## Glucose-containing fluids

A glucose-containing fluid is either an isotonic or hypotonic fluid with glucose.

[Adapted from the NICE guideline on [intravenous fluid therapy in children and young people in hospital](#)]

## Fluid resuscitation

To rapidly expand blood volume, restore or maintain blood flow to the organs can be a lifesaving intervention. IV fluid resuscitation is commonly used in term neonates, children and young people undergoing major surgery, to treat sepsis, and after severe trauma.

[Adapted from the NICE guideline on [intravenous fluid therapy in children and young people in hospital](#)]

## Quality statement 4: Fluid type for routine maintenance

### *Quality statement*

Term neonates, children and young people receiving intravenous (IV) fluids for routine maintenance are not given hypotonic fluids as the initial fluid.

### *Rationale*

There are safety concerns about the use of hypotonic fluids in term neonates, children and young people. They have been associated with the development of hyponatraemia (decreased sodium levels in the blood), which can increase the risk of developing brain swelling and neurological complications as a consequence of hyponatraemia. To avoid these adverse consequences, hypotonic IV fluids should not be given as the initial fluid, because the sodium levels are not known.

Children and young people should receive isotonic crystalloids (with glucose for term neonates) because they are physiologically comparable to normal plasma, and therefore the safest option.

### *Quality measures*

#### **Structure**

Evidence of local arrangements to ensure that term neonates, children and young people receiving IV fluids for routine maintenance are not given hypotonic fluids as the initial fluid.

*Data source:* Local data collection.

#### **Process**

Proportion of term neonates, children and young people receiving IV fluids for routine maintenance who are given hypotonic fluids as the initial fluid.

Numerator – the number in the denominator who are given hypotonic fluids as the initial fluid.

Denominator – the number of term neonates, children and young people receiving IV fluids for routine maintenance.

*Data source:* Local data collection.

## Outcome

Incidence of hyponatraemia attributable to IV fluid therapy in term neonates, children and young people.

*Data source:* Local data collection.

### *What the quality statement means for service providers, healthcare professionals and commissioners*

Service providers (hospitals) ensure that protocols are in place so that term neonates, children and young people receiving IV fluids for routine maintenance are not given hypotonic fluids as the initial fluid.

Healthcare professionals (such as hospital doctors and nurse practitioners) do not give hypotonic fluids as the initial fluid for term neonates, children and young people receiving IV fluids for routine maintenance.

Commissioners (such as clinical commissioning groups and NHS England) ensure that they commission services that do not give hypotonic fluids as the initial fluid to term neonates, children and young people receiving IV fluids for routine maintenance.

### *What the quality statement means for patients, service users and carers*

Term neonates (babies born at full term), children and young people receiving IV fluid therapy to maintain the level of fluid they need are not given a type of IV fluid called hypotonic fluid when they start IV fluid therapy. Intravenous fluids (usually shortened to 'IV' fluids) are liquids given to replace water, sugar and salt that a person might need if they are ill or having an operation, and can't eat or drink as they would normally. IV fluids are given straight into a vein through a drip.

## Source guidance

- [Intravenous fluid therapy in children and young people in hospital](#) (NICE guideline NG29) recommendations 1.4.3 and 1.4.7

## *Definitions of terms used in this quality statement*

### **Hypotonic fluids**

A hypotonic fluid is a solution with a lower concentration of electrolytes than body plasma. An example of a hypotonic fluid is 0.45% sodium chloride. Although some solutions are isomolar in vitro, they are hypotonic in vivo (for example 0.45% sodium chloride with 2.5% glucose). See NICE's guideline on [intravenous fluid therapy in children and young people in hospital](#) for further examples of hypotonic and isotonic fluids.

### **Routine maintenance**

To correct or maintain the fluid and electrolyte balance when term neonates, children and young people are not able to maintain their normal fluid needs by eating and drinking.

[Adapted from the NICE guideline on [intravenous fluid therapy in children and young people in hospital](#)]

## Quality statement 5: Intravenous (IV) fluids lead

### *Quality statement*

Hospitals have an intravenous (IV) fluids lead who has overall responsibility for training, clinical governance, audit and review of IV fluid prescribing, and patient outcomes.

### *Rationale*

The IV fluids lead in a hospital can promote best practice, ensuring that healthcare professionals are trained in prescribing and administering IV fluid therapy, and reviewing learning from incidents. This leadership role can ensure continuity of care in relation to fluid management through coordination between different hospital departments. Improved learning may reduce the number of future patient safety incidents.

### *Quality measures*

#### **Structure**

Evidence that hospitals have an IV fluids lead who has overall responsibility for ensuring adequate training, clinical governance, audit and review of IV fluid prescribing, and patient outcomes.

*Data source:* Local data collection.

#### **Outcome**

Patient safety incidents resulting from errors in IV fluid therapy in term neonates, children and young people.

*Data source:* Local data collection.

### *What the quality statement means for service providers, healthcare practitioners and commissioners*

**Service providers** (hospitals) ensure that they have an IV fluids lead who has overall responsibility for ensuring adequate training, clinical governance, audit and review of IV fluid prescribing, and patient outcomes.

**Healthcare professionals** who care for term neonates, children and young people receiving IV fluid therapy in hospital work in the context of clinical governance arrangements that have an IV fluids lead who has overall responsibility for ensuring adequate training, clinical governance, audit and review of IV fluid prescribing, and patient outcomes.

**Commissioners** (such as clinical commissioning groups and NHS England) ensure that they commission services from hospitals that have an IV fluids lead who has overall responsibility for ensuring adequate training, clinical governance, audit and review of IV fluid prescribing, and patient outcomes.

### *What the quality statement means for patients, service users and carers*

**Term neonates (babies born at full term), children and young people receiving IV fluid therapy** are cared for in a hospital that has a person who has overall responsibility for ensuring that they receive safe and effective IV fluid therapy. Intravenous fluids (usually shortened to 'IV' fluids) are liquids given to replace water, sugar and salt that a person might need if they are ill or having an operation, and can't eat or drink as they would normally. IV fluids are given straight into a vein through a drip.

### *Source guidance*

- [Intravenous fluid therapy in children and young people in hospital](#) (NICE guideline NG29) recommendation 1.8.1

### *Definitions of terms used in this quality statement*

#### **Responsible IV fluids lead**

The IV fluids lead will have overall responsibility, through a leadership role, for the quality of care relating to IV fluid therapy. The IV fluids lead should be somebody in a senior position, and may delegate specific functions through normal governance structures. The IV fluids lead is not expected to be the person who delivers the training, clinical governance, audit and review of IV fluid prescribing, and patient outcomes. Those functions can be delegated to professionals who have the necessary specialist knowledge in the hospital. For hospitals that provide both adult and children's services, this may be a single role with support from healthcare professionals with expertise from both services.

[Expert opinion]



## Using the quality standard

### *Quality measures*

The quality measures accompanying the quality statements aim to improve the structure, process and outcomes of care in areas identified as needing quality improvement. They are not a new set of targets or mandatory indicators for performance management.

We have indicated if current national indicators exist that could be used to measure the quality statements. If there is no national indicator that could be used to measure a quality statement, the quality measure should form the basis for audit criteria developed and used locally.

See [how to use quality standards](#) for more information, including advice on using quality measures.

### *Levels of achievement*

Expected levels of achievement for quality measures are not specified. Quality standards are intended to drive up the quality of care, and so achievement levels of 100% should be aspired to (or 0% if the quality statement states that something should not be done). However, NICE recognises that this may not always be appropriate in practice, taking account of safety, choice and professional judgement, and therefore desired levels of achievement should be defined locally.

NICE's [quality standard service improvement template](#) helps providers to make an initial assessment of their service compared with a selection of quality statements. It includes assessing current practice, recording an action plan and monitoring quality improvement. This tool is updated monthly to include new quality standards.

### *Using other national guidance and policy documents*

Other national guidance and current policy documents have been referenced during the development of this quality standard. It is important that the quality standard is considered alongside the documents listed in [development sources](#).

## Diversity, equality and language

During the development of this quality standard, equality issues have been considered and [equality assessments](#) are available.

Good communication between healthcare professionals and term neonates, children and young people receiving intravenous (IV) fluid therapy, and their parents or carers (if appropriate), is essential. Treatment, care and support, and the information given about it, should be both age-appropriate and culturally appropriate. It should also be accessible to people with additional needs such as physical, sensory or learning disabilities, and to people who do not speak or read English. Term neonates, children and young people receiving IV fluid therapy, and their parents or carers (if appropriate), should have access to an interpreter or advocate if needed.

Commissioners and providers should aim to achieve the quality standard in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity and foster good relations. Nothing in this quality standard should be interpreted in a way that would be inconsistent with compliance with those duties.

## Development sources

Further explanation of the methodology used can be found in the [quality standards process guide](#).

## Evidence sources

The documents below contain recommendations from NICE guidance or other NICE-accredited recommendations that were used by the quality standards advisory committee to develop the quality standard statements and measures.

- [Intravenous fluid therapy in children and young people in hospital](#) (2015) NICE guideline NG29

## Policy context

It is important that the quality standard is considered alongside current policy documents, including:

- Medicines and Healthcare products Regulatory Agency (2012) [Drug safety update: Intravenous 0.18% saline/4% glucose infusion solution \('hypotonic saline'\) in children: reports of fatal hyponatraemia](#)
- National Patient Safety Agency (2007) [Reducing the risk of hyponatraemia when administering intravenous infusions to children](#)

## Definitions and data sources for the quality measures

- [Intravenous fluid therapy in adults in hospital](#) (2013) NICE guideline CG174

## Related NICE quality standards

### *Published*

- [Diabetes in children and young people](#) (2016) NICE quality standard 125
- [Bronchiolitis in children](#) (2016) NICE quality standard 122
- [Intravenous fluid therapy in adults in hospital](#) (2014) NICE quality standard 66
- [Fever in under 5s](#) (2014) NICE quality standard 64
- [Meningitis \(bacterial\) and meningococcal septicaemia in children and young people](#) (2012) NICE quality standard 19

### *In development*

- [Blood transfusion](#) (publication expected December 2016)

### *Future quality standards*

This quality standard has been developed in the context of all quality standards referred to NICE, including the following topics scheduled for future development:

- Blood transfusion in neonatology
- End of life care for infants, children and young people
- Nutrition in hospital, including young people
- Parenteral nutrition in neonates

The full list of quality standard topics referred to NICE is available from the [quality standards topic library](#) on the NICE website.

## Quality standards advisory committee and NICE project team

### *Quality standards advisory committee*

This quality standard has been developed by quality standards advisory committee 3. Membership of this committee is as follows:

**Mr Ben Anderson**

Consultant in Public Health, Public Health England

**Miss Lauren Aylott**

Lay member

**Ms Deryn Bishop**

Public Health Behaviour Change Specialist, Solihull Public Health Department

**Jan Dawson**

Registered Dietitian

**Dr Matthew Fay**

GP, Westcliffe Medical Practice, Shipley, West Yorkshire

**Dr Malcolm Fisk**

Senior Research Fellow, Centre for Computing and Social Responsibility, De Montford University, Leicester

**Dr Ulrike Harrower**

Consultant in Public Health Medicine, NHS Somerset

**Ms Margaret Goose**

Lay member

**Dr Madhavan Krishnaswamy**

Consultant Clinical Oncologist, Southend University Hospital NHS Trust

**Mrs Geeta Kumar**

Clinical Director, Women's Services (East) Betsi Cadwaladr University Health Board

**Mrs Rhian Last**

Education Lead, Education for Health

**Mr Keith Lowe**

Head of Quality Support, Home Instead Senior Care (UK) Ltd

**Dr Hugh McIntyre (Chair)**

Consultant Physician, East Sussex Healthcare Trust

**Ms Ann Nevinson**

Lay member

**Professor Gillian Parker**

Professor of Social Policy Research, Social Policy Research Unit, University of York

**Mr David Pugh**

Independent Consultant, Gloucestershire County Council

**Dr Karen Ritchie**

Head of Knowledge and Information, Health Improvement Scotland

**Dr Eve Scott**

Head of Safety and Risk, The Christie NHS Foundation Trust, Manchester

**Mr Martin Siddorn**

Commissioning Manager, Swindon Borough Council

**Dr Susannah Solaiman**

GP and Clinical Lead for Integrated Care, Harford Health Centre, NHS Tower Hamlets Clinical Commissioning Group

**Dr Jim Stephenson**

Consultant Medical Microbiologist, Epsom and St Helier University Hospitals NHS Trust

**Mr Darryl Thompson**

Registered Nurse (Mental Health), South West Yorkshire Partnership NHS Foundation Trust

**Mrs Julia Thompson**

Health Improvement Principal, Sheffield City Council

The following specialist members joined the committee to develop this quality standard:

**Dr Peter Crean**

Consultant Paediatric Anaesthetist, Royal Belfast Hospital for Sick Children

**Dr Jan Dudley**

Consultant Paediatric Nephrologist, Bristol Royal Hospital for Children

**Mrs Debbie Evans**

Paediatric Nurse Practitioner, Cardiff and Vale University Health Board

**Dr Chris Gildersleve**

Consultant Paediatric Anaesthetist, Children's Hospital for Wales, Cardiff

**Ms Claudia Fisher**

Lead Councillor, Great Ormond Street Hospital, London

**Dr Peter Wilson**

Paediatric Intensive Care Consultant, Southampton General Hospital

### *NICE project team*

**Mark Minchin**

Associate Director

**Alaster Rutherford**

Clinical Adviser

**Rachel Neary-Jones**

Programme Manager

**Craig Grime**

Technical Adviser

**Nicola Greenway**

Lead Technical Analyst

**Anneka Patel**  
Project Manager

**Christina Barnes**  
Coordinator



## About this quality standard

NICE quality standards describe high-priority areas for quality improvement in a defined care or service area. Each standard consists of a prioritised set of specific, concise and measurable statements. NICE quality standards draw on existing NICE or NICE-accredited guidance that provides an underpinning, comprehensive set of recommendations, and are designed to support the measurement of improvement.

The methods and processes for developing NICE quality standards are described in the [quality standards process guide](#).

This quality standard has been incorporated into the NICE pathway on [intravenous fluid therapy in hospital](#).

NICE produces guidance, standards and information on commissioning and providing high-quality healthcare, social care, and public health services. We have agreements to provide certain NICE services to Wales, Scotland and Northern Ireland. Decisions on how NICE guidance and other products apply in those countries are made by ministers in the Welsh government, Scottish government, and Northern Ireland Executive. NICE guidance or other products may include references to organisations or people responsible for commissioning or providing care that may be relevant only to England.

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## *Endorsing organisation*

This quality standard has been endorsed by NHS England, as required by the Health and Social Care Act (2012)

## *Supporting organisations*

Many organisations share NICE's commitment to quality improvement using evidence-based guidance. The following supporting organisations have recognised the benefit of the quality standard in improving care for patients, carers, service users and members of the public. They have agreed to work with NICE to ensure that those commissioning or providing services are made aware of and encouraged to use the quality standard.

- [Association of Paediatric Anaesthetists of Great Britain and Ireland](#)

- Royal College of Nursing
- Royal College of Paediatrics and Child Health